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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Maurizio Galimberti

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

03/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/536,833	Applicant(s) GALIMBERTI ET AL.	
	Examiner Justin R. Fischer	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 49-54 and 60-98 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 49-54 and 60-98 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 49-54 and 60-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hara (JP 03169713, newly cited) and further in view of Larson (US 6,598,645, of record).

As best depicted in Figure 1, Hara teaches a motorcycle tire construction comprising a carcass 6, a pair of sidewalls 3, a pair of bead cores/wires 4, a cushion layer or layer of crosslinked elastomeric material 8, a band layer or zero degree belt layer, and a tread 2, wherein said cushion layer is positioned between said band layer and said carcass. Hara, however, fails to include an elastomeric material that is “associated” with said belt structure and comprises at least one layered inorganic material comprising an individual layer thickness from 0.01 to 30 nanometers. In any event, it is well known to include inorganic materials in tire rubber compositions in order to improve the reinforcement of a given elastomeric composition, as shown for example by Larson. In this instance, Larson suggests the inclusion of intercalated organoclays that are at least partially exfoliated in situ, wherein the exfoliated platelets have a thickness of about 1 nanometer and the particles of the stacked platelets have a thickness between 10 and 40 nanometers (Abstract, Column 2, Lines 25-35, and

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Column 4, Lines 55-67). As such, one of ordinary skill in the art at the time of the invention would have found it obvious to include such an inorganic reinforcement in the rubber layer of Hara.

Lastly, with respect to the independent claim, a fair reading of Larson suggests the general inclusion of such an intercalated clay in tire elastomeric compositions. This is evident in view of the following disclosure (Column 1, Lines 23+): **in particular**, tire carcass plies, carcass belts, sidewall inserts and apex components are addressed for use of such oriented intercalated clays and exfoliated portions thereof. Thus, the reference is describing preferred embodiments and it is well taken that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments (see MPEP 2123). It is emphasized that clays represent a well known filler material that are extensively used in tire rubber compositions and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the use of such a filler in the specific layer of the claimed invention.

With respect to claims 51, 52, 84, and 85, a portion of the intercalated organoclays are exfoliated, such that both intercalated clays and exfoliated portions are present.

Regarding claims 53, 54, 88, and 89, the increase in d-spacing appears to be a direct result of incorporating said inorganic material in an elastomeric composition. Applicant has not identified any specific processing means that results in the claimed increase and as such, one of ordinary skill in the art at the time of the invention would

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have expected the rubber layer of Hara in view of Larson to demonstrate the claimed increase in d-spacing.

Regarding claims 60, 61, 86, and 87, the claimed values are consistent with the dimensions of conventional tire belt layers. It is further noted that several examples listed in the tables have a thickness in accordance to the claimed invention (dimension RG).

With respect to claims 62 and 63, Larson describes the inclusion of said inorganic material at a loading between 30 and 100 phr (Column 4, Lines 5-10).

As to claims 64-67 and 91, Larson suggests the preferred inclusion of smectite clay, such as montmorillonite clay (Column 2, Lines 45-55).

Regarding claims 68 and 69, the inorganic material/clay of Larson is treated with a quaternary ammonium salt (Column 2, Lines 49-52).

With respect to claims 70-73, 92, and 93, the claimed elastomers represent the well known conventional elastomers used in the tire industry, as shown for example by Larson (Column 6, Lines 30-50). It is emphasized that each of the claimed elastomers is extensively used in a wide variety of tire components, including the belt structure. Lastly, the claimed elastomers are recognized as having a glass transition temperature in accordance to the claimed invention.

As to claims 74-77, 81, 94, and 98, silane coupling agents are conventionally used in tire rubber compositions to “couple” or connect silica to a base elastomer component, which ultimately improves the properties of a given tire component. Larson provides one example of such a composition (Column 7, Lines 25-30).

With respect to claims 78-80 and 85-97, tire compositions are generally described as including a plurality of reinforcing fillers, such as carbon black, silica, and/or clay materials. In this instance, Larson recognizes the manufacture of tire rubber layers comprising each of the aforementioned reinforcing fillers (Column 6, Lines 50-60).

Response to Arguments

3. Applicant's arguments with respect to claims 49-54 and 60-98 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer
/Justin R Fischer/
Primary Examiner, Art Unit 1791
March 18, 2009